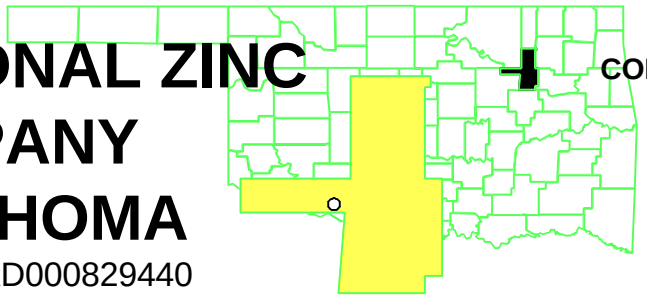
NATIONAL ZINC COMPANY OKLAHOMA

EPA ID# OKD000829440



EPA REGION 6
CONGRESSIONAL DISTRICT 05
Washington County
Bartlesville

Updated: November 1, 2002

Other Names:
National Zinc
Zinc Corp. of America

Site Description

Location:
- West 11th and Virginia Streets
- West side of Bartlesville, near the Washington County line

Population:
- Approximately 5,000 people live within one mile of the site.
- An estimated 1,700 students attend schools, and 170 people work near the site.

Setting:
- The site area is a mixed residential, commercial, and industrial area.
- The contaminated area is approximately 8 square miles.
- The source of contamination is a zinc smelter of approximately 150 acres.
- Air dispersion of heavy metals, including lead and cadmium, and community fill projects using smelter slag.

Hydrology:
- The site is characterized by a surface of silt and sandy loam.
- Subsurface formations consist of shale, siltstone, sandstone, and limestone.
- No ground water contamination issues exist at this time.

Present Status and Issues

- Remaining actions include sampling and remediation on additional property owned by SK&OO railroad, implementing institutional controls by the City of Bartlesville, and preparation of the final completion report.

Wastes and Volumes

The principal pollutants at the site include:

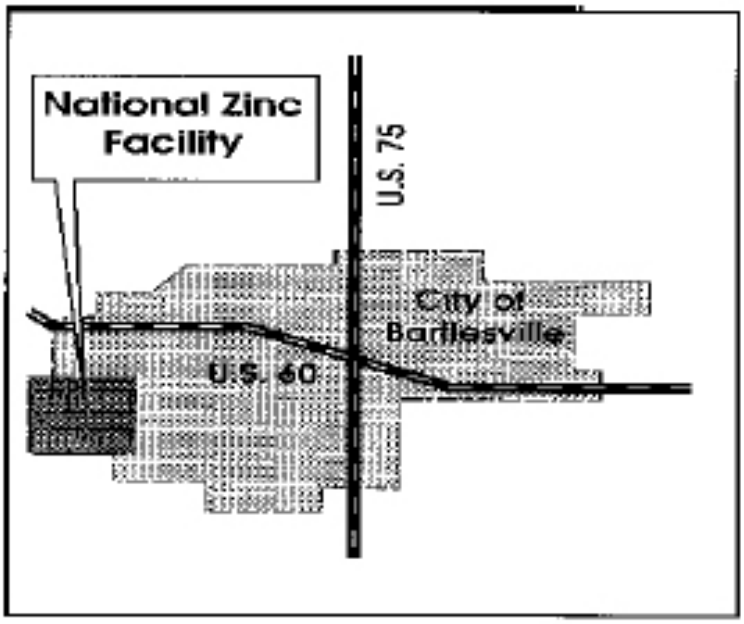
- Lead (soil): 12,000 ppm
- Cadmium (soil): 1,400 ppm

The total volumes of these wastes are undetermined at this time. (PPM = Parts Per Million)

Site Assessment and Ranking

NPL LISTING HISTORY
Site HRS Score: 50.00
Proposed Date: 5/10/93
Final Date: Pending
NPL Update: No. 14

Site Map and Diagram



The Remediation Process

Site History:

! Zinc smelting operations have been conducted at the smelter site since 1907.
! Air emissions were uncontrolled until 1976, when the old retort-type smelter was replaced by an electrolytic smelting process.
! The pre-1976 operations are presumably the source of the widespread heavy metal contaminations at the site.
! A significant amount of contamination resulted from the use of slag material and other smelter waste in fill projects in the area.
! In 1992, the site was selected as a SACM (Superfund Accelerated Cleanup Model) pilot project. Within one year, 29 removal actions had been completed, over 4,000 soil samples had been taken to characterize a 36 square mile area, and a blood lead study had been completed showing elevated levels of

blood lead associated with elevated soil lead levels.

! Superfund addressed the contamination outside of the Zinc Corporation of America (ZCA) facility, under the National Zinc (NZ) Site. Contamination within the ZCA facility fence is being addressed under authority of the Resource Conservation and Recovery Act (RCRA).

! The EPA Superfund removal action addressed contamination in 29 high access or public access areas (schools, day care facilities, playgrounds, etc.) in fall 1992.

! In 1993 the removal action addressed 22 residences of individuals with elevated blood lead levels. Soil contaminated with lead above 500 parts per million (ppm), and with cadmium above 30 ppm, was excavated and removed. The excavated areas were back-filled with clean soil and sodded.

! In 1994 and 1995 the removal action addressed removal of contaminated soil from approximately 400 residential properties by the potentially responsible parties under an EPA Unilateral Admininstative Order.

! In 1993, at the request of elected representatives, community leaders, and potentially responsible parties, EPA agreed to allow the State and PRP's to carry out accelerated investigations and residential soil removal actions, under the State's Voluntary Clean Up program. In return, EPA would postpone final action regarding placement of the site on the National Priorities List.

! The PRPs and the State of Oklahoma entered an agreement for the implementation of the selected remedy on August 7, 1995. At this time, the EPA removal activities ceased and State-lead remedial action began.

! The State of Oklahoma selected a remedy in December 1994 including excavation and off-site disposal of soil from residential properties and a mixture of approaches for commercial properties.

! The ROD for Operable Unit (OU) No. 1 (residential and commercial properties areas) was issued by the State on December 13, 1994.

! The remedial action for OU No. 1 began on August 7, 1995.

! A total of approximately 300 residential properties were cleaned up through 1997 under the State-lead.

! The residential yard remediation was completed in February 1998, except for about 90 properties where access was previously denied. These properties were sampled in Summer 1998 of which 14 were determined to be contaminated. These additional 14 homes were remediated in the Fall 1998.

! The number of residential yards remediated was 1008.

! The number of industrial properties remediated was 49.

! The number of alleyways remediated was 74.

! The Union Pacific Railroad Right of Way has been remediated and part of the SK&O railroad right of way has been remediated.

! The remedial action has been substantially completed as of September 2001.

! The State of Oklahoma selected a remedy in October 1996 including excavation and off-site disposal of sediments from impacted streams and tributaries.

! The ROD for OU No. 2 (ecological areas) was issued by the State on October 2, 1996.

! The remedial design for the sediment removal portion of OU No. 2 was approved October 16, 1997.

! The remedial action for OU No. 2 began on December 9, 1997.

! Approximately 10,000 cubic yards of sediment were removed from streambeds and disposed of in a landfill.

! The remedial action for OU No. 2 was completed on August 13, 1999.

! A five-year remedy review was completed and signed by the Oklahoma Department of Environmental Quality (ODEQ) on October 25, 2001.

Health Considerations:

! Blood lead studies funded by Agency for Toxic Substances and Disease Registry (ATSDR) and performed by Oklahoma State Department of Health (OSDH), (now ODEQ), in 1991 and 1992 indicated that approximately 14% of the children in the contaminated area had elevated levels of blood lead greater than 10 micrograms per deciliter (ug/dl).
! The study revealed that children on the west side of Bartlesville, the side where the facility is located, had elevated levels of blood lead whereas the children on the east side did not.
! Blood lead level testing was performed on children in 1995 for the initial study and annually thereafter until 2000 on a volunteer basis for children from infancy to the age of five. The two-year study was completed in 2001. The next five-year study for blood lead levels will be performed in 2004, five years after remedial action was substantially complete. OSDH summarizes results of the blood lead level testing results compiled from 1995 through 2001. Any concentration 10 ug/dL and above is considered to be an elevated blood level. Using this criteria, no children with elevated blood levels were reported in 1998, 1999, 2000 or 2001.

Record of Decisions

OU1 Signed: December 13, 1994
OU2 Signed: October 2, 1996

! The operable unit 1 (OU1) Record of Decision (ROD) which addresses residential and commercial properties was signed by the State of Oklahoma on December 13, 1994.
! The selected remedy included: (1) replacement of soil on residential properties with greater than 925 ppm lead, 100 ppm cadmium, and 60 ppm arsenic; (2) Contaminated soil at commercial properties would be addressed through a combination of capping, replacement, tilling, and phosphate treatment.
! The OU2 ROD which addressed ecological areas was signed by the State of Oklahoma on October 2, 1996.
! The OU2 ROD called for excavating sediments contaminated with heavy metals in the upper reaches of the North Tributary. The North Tributary drains from the smelter property and flows into Eliza Creek. Ecological impacts in the lower portion of the North Tributary and Eliza Creek are expected to recover by natural processes once the sediment is removed from the upper reaches of the North Tributary near the smelter and after source control measures are implemented at the smelter.

Community Involvement

! Community Involvement Plan: Developed 4/93
! Open houses and workshops: 7/92, 9/92, 6/93, 11/93, 2/94, 3/94, 6/94, 9,94, 12/94, 2/95, 4/95, 8/95, 3/96, 5/96
! Original Proposed Plan Fact Sheet and Public Meeting: 9/8/94
! Original ROD Fact Sheet: N/A
! Milestone Fact Sheets: Approximately 10 have been published from 1993 to present.
! Citizens on site mailing list: 35
! Constituency Interest: Site is high profile; some concern exists about the economic impact to the community if site were to be listed as final on the National Priorities List (NPL). Some "Environmental Justice" issues have been voiced.

! Site Repository: Bartlesville Public Library, 600 S. Johnstone, Bartlesville, OK 74005
- Established 9/92

Technical Assistance Grant

! Availability Notice: Published 4/93 - citizens also made aware at availability sessions.
! Letters of Intent acknowledged on 5/30/93 in the Bartlesville Enterprise-Examiner.
! Letters of Intent Received:
1) Bartlesville Environmental Information Coalition (BEIC) - 5/5/93
2) Citizens Against Toxics (CAT) - 5/20/93
! Final Application Received: 5/94
! Grant Award: TAG awarded by potentially responsible parties (PRPs) in June 1994 to consolidation of citizen groups.
! Current Status: Consolidation of citizen groups participating in TAG process. (No TAG activity or involvement by EPA).

Contacts

! **Remedial Project Manager (EPA):**	Bartolome J. Canellas, 214/665-6662, Mail Sta. 6SF-LP
! **Region 6 Ombudsman (EPA):**	Arnold Ondarza, 1-800-533-3508, Mail Sta. 6SF
! **State Contact:**	Dennis Datin, ODEQ, 405/702-5125
! **Community Involvement (EPA):**	Bartolome J. Cañellas, 214/665-6662, Mail Sta. 6SF-LP
! **Attorney (EPA):**	Jim Costello, 214/665-8045, Mail Sta. 6RC-S
! **State Coordinator (EPA):**	Roberta Hirt, 214/665-8079, Mail Sta. 6SF-LT
! **Prime Contractor:**	State - PRP Pilot Project

Enforcement

! Unilateral Administrative Order issued on 2/2/94 to two PRPs to conduct the removal of soil from residential properties that have lead concentrations exceeding 1,500 ppm and cadmium concentrations exceeding 90 ppm.
! Two PRPs agreed to conduct the remedial investigation and feasibility studies under a consent agreement with the State issued 4/8/94.
! One PRP agreed to conduct the remedial action for Operable Unit 1 (residential and commercial properties) under a consent agreement with the State issued 8/7/95.
! One PRP agreed to conduct the remedial action for Operable Unit 2 (ecological areas) under a consent agreement with the State issued 2/19/97.

Benefits

! Approximately 1,000 residential properties contaminated with heavy metals were remediated thereby protecting residents for lead exposure.
! Cleaning up the soils in the residential areas is expected to significantly lower the overall blood lead levels in the community. This is supported by blood lead level testing results.